1. (1 pt)

Find an equation for of each of the lines in the figure.

Line A (in red) has equation $y = $ 

Line B (in blue) has equation $y = $ 

(Click on graph to enlarge)

2. (1 pt) Write the linear equation $100x + 50y = 450$ in slope-intercept form. Enter your answer as an equation in slope-intercept form.

The slope is $m =$ 

The $y$-intercept is $b =$ 

(Click on graph to enlarge)

3. (1 pt) Without a calculator, match each equation with its graph A-G.

\[
\begin{align*}
\text{?} & \quad y = x - 2 \\
\text{?} & \quad -3x + 2 = y \\
\text{?} & \quad 4 = y \\
\text{?} & \quad y = -2x - 3 \\
\text{?} & \quad y = x + 4 \\
\text{?} & \quad y = \frac{x}{3} \\
\text{?} & \quad 4 = x
\end{align*}
\]

(Click on a graph to enlarge it)

4. (1 pt) Find the equation of the line that passes through the $(x,y)$ points $(-4, 5)$ and $(1, 6)$.

$y =$ 

5. (1 pt) The monthly charge for a waste collection service is 1630 dollars for 100 kg of waste and 2430 dollars for 150 kg of waste.

(a) Find a linear model for the cost, $C$, of waste collection as a function of the number of kilograms, $w$.

$C =$ 

(b) What is the slope of the line found in part (a)?

Slope = 

Think about the interpretation of the slope: are the units of the slope

- A. dollars
- B. kilograms
- C. kilograms per dollar
- D. dollars per kilogram

(c) What is the value of the vertical intercept of the line found in part (a)?

Value = 


Think about the interpretation of the intercept: are the units of the intercept

- A. kilograms per dollar
- B. dollars per kilogram
- C. kilograms
- D. dollars

6. (1 pt) The expression \((3a^5b^3c^2)^2(2a^2b^5c^3)^3\) equals \(na^rb^sc^t\)
   where \(n\), the leading coefficient, is: _____
   and \(r\), the exponent of \(a\), is: _____
   and \(s\), the exponent of \(b\), is: _____
   and finally \(t\), the exponent of \(c\), is: _____

7. (1 pt) Enter numerical values for the following powers. I recommend you don’t use a calculator, to make sure you understand the concepts involved. Your answer needs to be a natural number, the system will not accept an arithmetic expression.
   \(9^{\frac{1}{2}} = \) __
   \(8^{\frac{1}{2}} = \) __
   \(27^{\frac{1}{3}} = \) __

8. (1 pt) Enter numerical values for the following powers.
   \((5^2)^{\frac{1}{3}} = \) __
   \((2^3)^{\frac{1}{2}} = \) __
   \((3^3)^{\frac{1}{2}} = \) __
   Hint: You take a power to a power by multiplying the exponents.

9. (1 pt) Match the radical expressions below with the letters labeling their equivalent exponential expressions.
   ___1. \(\sqrt[3]{17}\)
   ___2. \(\sqrt[3]{a^3}\)

10. (1 pt) Evaluate the expression
    \[ \frac{\sqrt{180}}{\sqrt{5}} \]
    Your answer is __

11. (1 pt) The expression
    \[ \left( \frac{3a^{-4}}{3b^{-1/2}} \right)^{-1} \]
    equals \(na^rb^s\) where
    \(n\), the coefficient, is: _________
    \(r\), the exponent of \(a\), is: _________
    \(t\), the exponent of \(b\), is: _________

12. (1 pt) The expression
    \[ \sqrt[3]{a^5b^2} \]
    equals \(a^rb^s\) where
    \(r\), the exponent of \(a\), is: _________
    \(s\), the exponent of \(b\), is: _________

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